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ABSTRACT

This booklet was developed to help in the design and implementation of self-management systems for elementary-classroom students with developmental disabilities. Self-management components addressed in the booklet are self-monitoring, self-evaluation, and self-reinforcement. Chapters provide: (1) the definitions and rationale for teaching self-management techniques; (2) instructional principles that underlie the phases of designing and implementing self-management interventions, including supervising the use of self-management, charting students' performance of desired behavior, reinforcing students' appropriate use of self-management, altering self-management techniques when necessary, using combinations of behavior management techniques, and involving students in the development of self-management components; (3) phases for design and implementation, including selecting the behavior for self-management, preparing to teach self-management, teaching the student self-management using a 10-step process, and evaluating the student's performance; (4) three classroom scenarios in which teachers follow the instructional guidelines to implement self-management systems with their students; (5) ways to promote generalization of self-management techniques; and (6) a summary of the benefits and procedures for teaching self-management to students with developmental disabilities. (Contains 35 references.) (CR)

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Teaching Self-Management to Elementary Students with Developmental Disabilities

Margaret E. King-Sears and Stephanie L. Carpenter

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Research Foundations

"Promoting Independence in Integrated Classrooms by Teaching Aides to Use Activity Schedules and Decreased Prompts"

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"Improving Social Skills and Disruptive Behavior in Children With Autism Through Self-Management"

"Self-Recording in a Classroom for Students With Mild to Moderate Mental Handicaps: Effects on Productivity and On-Task Behavior"

"Teaching Daily Living Skills to Children With Autism in Unsupervised Settings Through Pictorial Self-Management"

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Teaching Self-Management to Elementary Students With Developmental Disabilities

Margaret E. King-Sears
Stephanie L. Carpenter

Diane Browder
Editor, *Innovations*

American Association on Mental Retardation

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CHAPTER ONE

Introduction

Self-management, quite basically, actively involves students in monitoring and controlling their behaviors.

Effective instructional principles are only a beginning for teachers working with students who have disabilities. To prepare students for independence and self-control in school settings and future life experiences, the students themselves need to assume responsibility for managing their behaviors. Students need to be taught how to manage their own behaviors, especially tasks they already know (for example, self-help skills, morning routines, task sequences) but do only when prompted by the teacher.

Typically, teachers and assistants who work with students with developmental disabilities use a sequence of prompts (e.g., gestures, verbal, physical) during instruction. Although appropriate for teaching new tasks, prompts should be faded whenever possible, and the responsibility for task completion should be shifted to the student. Moreover, students with disabilities are not likely to generalize behaviors learned through teacher-managed interventions unless they are specifically instructed in how to do this. The self-management techniques discussed in this publication provide a logical "next step" for students who are successful with externally managed systems such as teacher-delivered prompts, reinforcement systems, or token economies. The control for continued and independent performance shifts from the teacher to the student.

This book was developed to help you design and implement self-management systems for elementary-classroom students with developmental disabilities. Self-management components addressed in this book are self-monitoring, self-

evaluation, and self-reinforcement. This chapter provides an overview of definitions and rationales for teaching self-management techniques.

Definitions of Self-Management

Self-management, quite basically, actively involves students in monitoring and controlling their behaviors. Self-regulation and self-control of one's own behavior are other terms used to describe forms of self-management. Young students with developmental disabilities have successfully used self-management techniques to independently (1) complete seatwork assignments, (2) follow classroom rules, (3) increase on-task behaviors, (4) complete prevocational tasks, and (5) decrease disruptive or inappropriate behaviors.

Self-management systems provide a framework to guide students in making decisions about their behavior or performance and to document those decisions. Some forms of self-instruction (see *Innovations* publication on self-instruction by Agran & Moore, 1994) or self-talk may be inherent in these processes, but our focus here is on the decisions that students make about their behavior or performance as they (1) record whether or not a behavior occurred, (2) assess the relative quality of their performance, and/or (3) reward themselves for accomplishing tasks or goals. We define self-management as an individual's use of specific documentation procedures to monitor, evaluate, and/or reinforce his or her own behavior.

Self-Monitoring

Self-monitoring involves students' recognizing and recording the occurrence or nonoccurrence of a specific behavior. This requires two actions: self-observation (e.g., "I can see that I just waited and talked only after I'd received permission...") and recording one's own actions ("...so I'll mark another tally for myself on my index card"). For some students with disabilities, self-monitoring has been effective because it helps them focus their attention on a specific behavior that has been clearly defined and demonstrated for them. One interesting consequence of self-monitoring is a "reactivity" effect—a behavior improves as a result of merely being counted or noted by the student. But that effect may be temporary unless follow-up, such as reinforcement, occurs.

> Students with mild to moderate disabilities who used self-monitoring not only increased their on-task behavior, but also increased their productivity.
>
> — McCarl, Svobodny, & Beare (1991)

Self-Evaluation

Self-evaluation, or self-assessment, involves comparing one's own behavior to a self- or externally determined standard. To self-evaluate, students must already be able to determine that they have exhibited specific behaviors. This means that self-evaluation is usually part of a package of self-management and follows a student's use of self-monitoring. The focus in self-evaluation moves beyond simply noting a behavior's occurrence or nonoccurrence. Students must compare their behavior to some type of standard, or scale, and decide how they performed relative to that standard; students make a judgment about the quality or quantity of their performance.

> Students with autism who used self-reinforcement not only learned how to respond appropriately to others, but they also reduced their disruptive behaviors.
>
> — Koegel, Koegel, Hurley, & Frea (1992)

Self-Reinforcement

Self-reinforcement occurs when students self-select and/or administer desirable consequences after meeting preestablished performance standards for target behaviors. To self-reinforce, a student must be able to recognize the occurrence of the specific behavior (i.e., self-monitor) and determine whether the level of performance meets the criteria (i.e., self-evaluate). If it does, the student gives him- or herself a reward.

> Initially an adult verbally prompted students with autism who were learning self-reinforcement to take a reinforcer they had earned; eventually the verbal prompt was faded to minimal nonverbal prompts, and students more independently accessed their rewards.
>
> — Koegel, Koegel, Hurley, & Frea (1992)

Expected Changes and Benefits

Self-management can be used in special-education and general-education classrooms, during other activities during the school day (e.g., lunch, recess), and at home. We here discuss three specific ways self-management impacts the nature of classroom instruction and interactions in any number of settings: Self-management (1) affects teachers' and peers' instructional behaviors, (2) affects the student's behavior, and (3) sets the stage for self-determination.

Changed Instructional Behaviors

Your instructional behaviors may change as you implement self-management procedures. Teachers, instructional assistants, and sometimes peers can acquire teaching and relational behaviors that ultimately benefit the student across the school day. Effective instructional behaviors that may accompany self-management include:

1. As you present behavior components or task sequences in simple, concise language during training, the instruction becomes more concrete and meaningful to students.
2. As you increase opportunities for students to prompt themselves using visual, auditory, or manipulative devices, the need for you and others to provide physical and verbal prompts may decrease.
3. As you increase opportunities for students to generalize their self-management across activities, instructional objectives become less fragmented.

As peers learn ways to prompt their classmates with developmental disabilities to use self-management to perform tasks independently, peer relationships are likely to reflect parity and equity rather than dependence.

As students become less dependent, you or instructional assistants have more time to provide direct learning experiences to more students.

Changed Student Behaviors

The implementation of self-management procedures may be accompanied by changes in students' behaviors in the instructional setting. As

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students with developmental disabilities use self-management techniques, their awareness of their actions increases and their reliance on others to monitor, provide feedback on, and reinforce their behaviors decreases.

For example, students may not be aware of how much they are talking out in class, how many times they ask for teacher assistance, or how distracting their actions are to others. But self-management instruction includes detailed descriptions of students' target behaviors, allowing students to recognize the behavior and asking them to record their performance of those specific behaviors.

Teaching students how to self-manage their behaviors is consistent with developing self-direction. When teachers maintain control over and responsibility for students' behavioral change and maintenance, students remain dependent. However, when self-management systems are used regularly as a component of the instructional program in elementary grades, a foundation for independence is established early on that can be built on progressively throughout their school-age years.

Other Benefits

Self-management techniques are inexpensive, can increase the effectiveness of traditional applied behavior analysis procedures, are relatively easy to implement, and have been favorably received by many teachers and students. Indeed, students often prefer using self-management because they have more opportunities for choice, decision making, and control over their work.

Despite the benefits of teaching students how to self-manage their behaviors, some teachers may be reluctant to use these systems because they may seem, at first glance, too challenging for students with developmental disabilities. For example, you may be afraid that students will "fail" if expectations are too great. The intent is not to set unrealistic expectations but to provide sufficient training that fosters students' success using self-management to change behaviors of concern.

Some teachers may not want to take time away from instruction on skills to train students to use self-management procedures. This time investment is not substantial—and may consume less time in the long run than more intensive teacher-managed interventions. Busy teachers need to enter into this process believing that it will be worth their, and their students', efforts.

Purpose of This Book

Some teachers are keenly aware that they need to be teaching students how to be more independent, but they have not found readily available steps, sequences, nuances, and details of how to teach self-management. The purpose of this book is to synthesize and simplify a variety of research-based self-management methods in a user-friendly format.

The instructional procedures and case descriptions in this book have been compiled to assist you in effectively implementing self-management systems with students with developmental disabilities. Chapter 2 gives instructional principles that underlie the four phases of designing and implementing self-management interventions as laid out in chapter 3. Chapter 4 describes several classroom scenarios in which teachers are following the instructional guidelines to implement self-management systems with their students. Chapter 5 presents several ways to promote generalization of self-management techniques to additional areas of a student's school, home, and community environment. Chapter 6 summarizes the benefits and procedures for teaching self-management to students with developmental disabilities in elementary-school settings.

CHAPTER TWO

Instructional Principles

Teachers apply six instructional principles throughout self-management instruction.

The systematic procedures recommended in chapter 3 represent a compilation of techniques found to be effective for teaching self-management to children with developmental disabilities. The procedures incorporate instructional principles based on behavioral programming. In this chapter, one teacher's experiences in working with two students (both with developmental disabilities) are used to illustrate both the teacher's application of self-management procedures and the flexible nature of the procedures based on the responses of the individual students.

Teachers apply six instructional principles throughout self-management instruction (see Table 1). These principles include elements of behavioral programming such as reinforcing desired behaviors, graphing performance data, making decisions about the effectiveness of the intervention, and making changes as necessary to ensure desired outcomes. The instructional principles provide guidelines for responding to the unique characteristics of individual students. The following example illustrates several of the instructional principles listed in Table 1. After the example we discuss the six principles.

Enhancing Outcomes for Individual Students

Two students write very little during Writer's Workshop. Noah likes to write but is easily

Table 1

Instructional Principles

1. Supervise the use of self-management.
2. Chart students' performance of desired behavior.
3. Reinforce students' appropriate use of self-management.
4. Alter self-management techniques when necessary.
5. Use combinations of behavior management techniques.
6. Involve students in the development of self-management components.

distracted by what his classmates are doing. The other student, Nicole, does not like to write and prefers to spend most of her time coloring to illustrate her "stories."

Both students agreed that they would like to improve their writing performance and were willing to try a new way to increase the number of words they write during the daily 15-minute writing period. Their teacher is teaching both students to self-monitor whether they are writing or not when a chime sounds at random intervals ranging from 1 to 3 minutes during the time allotted for writing each day. The students are given a special documentation form. When the chime sounds, the teacher checks to see if the students mark a "+" if they are writing and a "0" if they are not.

For the first few days of independent practice, the teacher observes both students to see if they are self-monitoring appropriately at the sound of each chime. She marks a duplicate form to provide a comparison for the students' self-monitoring accuracy. When the writing period is over, she compares the marks on the students' self-monitoring forms to the marks she made to indicate whether they indeed were writing when the chime sounded. She also counts the number of lines and words written (i.e., the behaviors she wants to change) by each student and then records the data for the behaviors on a graph for each student. She refers to the graphs (see Figures 1 and 2) to see whether the desired changes are occurring in the behaviors. The teacher refers to the graphed data of the behavior and the accuracy of the students' self-monitoring to make decisions about how to proceed with self-management instruction.

The teacher observes that Noah marks his form accurately each time, most often with a "+". To encourage Noah to continue accurate monitoring, the teacher smiles at him and nods her head approvingly, but does not interrupt. Noah continues to self-monitor whenever he hears the chimes. At the end of the 15-minute writing period, he is pleased that he was writing each time the chime sounded. The graph for Noah's writing shows an increase in the number of lines and words written during each writing session.

After 1 week of daily observations of Noah during writing sessions, the teacher sees that Noah continues to self-monitor accurately and that the desired behavior will soon be at levels similar to his classmates. The teacher continues to check Noah's self-monitoring form daily and praises the amount of writing he is doing. She discontinues daily marking of the duplicate monitoring form as well as daily recording of the number of words and lines Noah is writing. She randomly chooses one writing session each week to formally monitor Noah's self-monitoring (e.g., marks a duplicate form) and behavior (counts and graphs the number of lines and words written).

Figure 1

Noah's Behavior Change During Self-Management

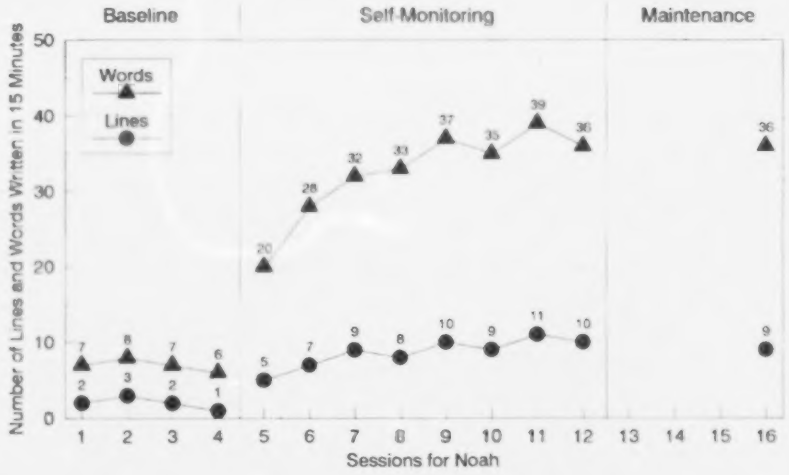
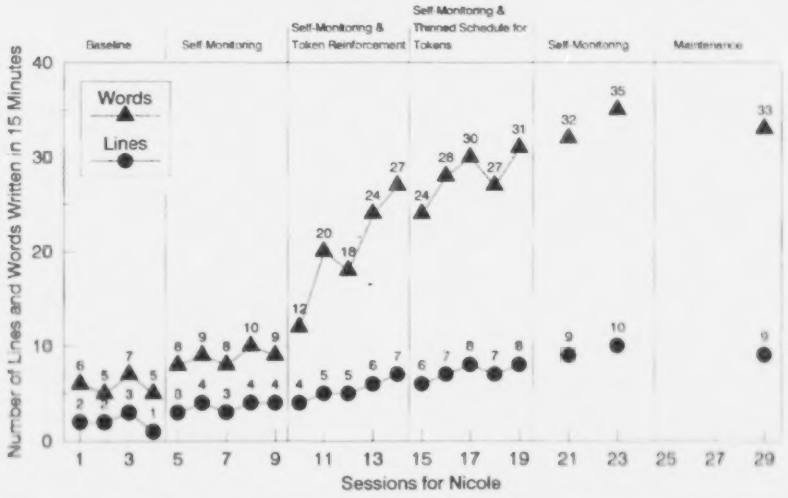


Figure 2

Nicole's Behavior Change During Self-Management



During initial daily observations of Nicole, the teacher notes that Nicole either doesn't mark her form at all or marks a "+" whether or not she is writing when the chime sounds. Nicole does not seem to respond to the teacher's smiles or words of encouragement. After one week of daily observations of Nicole during writing sessions, the teacher's graph for Nicole's writing shows no change in the number of lines and words written during each session. The teacher talks to Nicole about her writing and self-monitoring. Nicole indicates that she still does not like writing and misses the time for coloring. Together they decide that coloring time could be provided if Nicole gets her writing done and that tokens given for writing and self-monitoring might let Nicole know how much coloring time she would earn.

Thus, the teacher adds the token reinforcement system for Nicole and continues daily observation and data collection for self-monitoring and writing. She gives Nicole: (1) one token for marking her form if the mark does not match the teacher's, (2) two tokens if the mark matches the teacher's, and (3) three tokens if a matching mark is a "+". At the end of the class, Nicole receives 1 minute of free time to color in exchange for every three tokens. The teacher also praises Nicole each time she receives a token.

The teacher notes that, in response to the tokens and coloring time, Nicole is self-monitoring appropriately and writing more. The graphed data for Nicole's writing confirm the teacher's observations, showing an increase in the number of lines and words written during each session. After five successful writing sessions, the teacher thins the token reinforcement schedule so that Nicole receives tokens only for matching marks as described in (2) and (3). The teacher continues daily formal observations, marking a duplicate monitoring form and graphing the number of words and lines written.

Once Nicole has used the self-monitoring successfully for another week, the teacher discontinues the tokens but continues to allow Nicole to have free time to color when she has all "+" marks on her self-monitoring form at the end of the writing period. The formal monitoring occurs twice a week for the first no-token week; then, when the self-monitoring and writing continue as desired for a week, the formal monitoring occurs randomly once a week. To encourage Nicole, the teacher continues to smile at her and nod approvingly. Nicole continues to self-monitor her writing, and the teacher works with her to teach goal setting and self-evaluation for goal attainment.

1. Supervise Use of Self-Management

This is the first instructional principle (see Table 1). Monitoring provides feedback on students' use of the documentation procedure and the effects of self-management on the behavior. Frequent supervision is necessary when students initially use self-management; then less frequent monitoring may suffice once students are proficient.

In the beginning, daily formal and informal supervision permits the teacher to address problems promptly. Formal supervision includes specific observations and data collection of the behavior and of the self-management documentation for each session. Informal monitoring involves reviewing students' self-management documentation and delivering feedback and additional instructions as necessary.

Once students use self-management procedures appropriately for three to five consecutive sessions, you may conduct formal observations once every three to five sessions (e.g., weekly probes) while continuing daily informal monitor-

ing. Ongoing monitoring can alert the teacher as to when students do not need to use self-management anymore, when changes in the system may be necessary, when students are ready to use more complex self-management components, or when additional or more complex behaviors can be targeted for change.

2. Chart Student Performance

Graphing or charting results of self-management of a specified behavior can help you determine whether or not the procedure is having the desired effect. The visual display of changes in behavioral performance lets the teacher know when changes may be necessary due to lack of progress (refer to Figures 1 and 2). Involving students in setting goals for themselves and viewing the graphed results of their efforts increases students' awareness of progress. Most data collection systems for self-management quite naturally lend themselves to numerical indicators that can be graphed.

3. Reinforce Appropriate Use

Reinforce students' appropriate use of self-management. After students have been instructed to use a self-management technique and initial training data indicate that students understand how and when to use self-management, appropriate applications should be reinforced. By definition a reinforcer increases the likelihood that a behavior will occur again or with increased frequency. Potential reinforcers include tangibles and activities. Verbal praise is a natural and effective reinforcer for some students, and it can be used in combination with other reinforcers.

When students initially use self-management, a frequent schedule of reinforcement encourages consistent and accurate use of the technique; once the educator is satisfied that the student is using the technique appropriately, thinning the reinforcement schedule promotes continued performance of the technique under natural and student-controlled conditions.

For some students, the act of documenting one's actions may be reinforcing enough to use the system effectively to change specified behaviors. Students who are resistant to learning self-management techniques or for whom the self-management system itself presents a challenge may benefit from reinforcement given specifically for self-management.

Let's look at this principle in terms of Noah and Nicole.

Noah and Nicole each have difficulty performing the same behavior consistently, but for different reasons. Noah is easily distracted, and Nicole does not like writing. Noah uses self-monitoring and increases the specified behavior with minimal external reinforcement from the teacher. The teacher's nods and smiles serve as naturally occurring and spontaneous reinforcers for Noah. Nicole benefits from systematic application of tangible reinforcements (tokens) in order to learn to self-monitor and improve the behavior of concern.

4. Alter Techniques When Necessary

Alter self-management techniques when necessary. When desirable changes do not occur, you can evaluate implementation efforts to determine what needs to change. Analyses can determine if (1) the documentation technique is being used correctly, (2) the documentation time interval needs to be changed, (3) more instruction and role-playing of the technique needs to occur, (4) potential reinforcer(s) are motivating or powerful enough for students, (5) other factors are impacting on students' behaviors, or (6) an alternative or additional behavior management system needs to be used.

Nicole's teacher opts to try a token reinforcement system with Nicole that addresses the use and accuracy of self-monitoring as well as the occurrence of the behavior. In doing this, the teacher is addressing Nicole's correct use of the self-monitoring documentation form, Nicole's resistance to writing (i.e., the behavior of concern), and the need to enhance the self-management techniques by using a potential backup reinforcer (coloring) for the tokens. As described in chapter 3, the teacher uses demonstration and role play of writing while self-monitoring in conjunction with the token system to ensure that Nicole understands the modified expectations for writing performance. If Nicole seems to need a more frequent reminder and reinforcer for writing, the teacher could shorten the time interval between self-monitoring prompts and opportunities to earn tokens (e.g., chimes sounding every 30 to 60 seconds instead of at random intervals of 1 to 3 minutes).

5. Combine Behavior Management Techniques

Use combinations of behavior management techniques. Numerous behavioral techniques for increasing students' desired behaviors and decreasing undesired behaviors are available. Teachers familiar with sound behavior management research are aware of positive techniques that are most likely to result in desired behavior changes. Behavior management methods in the teacher's repertoire can be used to enhance or complement the effects of self-management. Similarly, self-management components can be combined with each other to yield the desired changes in students' performance of specific behaviors.

The token reinforcement system implemented for Nicole is a behavior management method used in combination with self-monitoring. In this scenario, the teacher delivers the token to Nicole and determines the amount of coloring time Nicole has earned. However, self-reinforcement could be combined with self-monitoring if Nicole gives herself tokens and/or decides how much time she can color in exchange for her tokens. The self-reinforcement in combination with self-monitoring is advantageous because, once the technique is learned and used appropriately, Nicole is not dependent on the teacher's availability to have access to reinforcement.

6. Involve Student in Development

As early on as possible, students should be involved in the development of self-management components. Their initial involvement may be as minimal as identifying reinforcers for which they want to work. Later they might help target their behaviors, select reinforcers, design methods for recording their behaviors, graph results to note their progress, and set goals for future performance.

Throughout self-management instruction, use the instructional principles (refer to Table 1) to guide your decision making as you address the learning and behavioral characteristics of individual students. Similarly, the design and implementation phases provide guidelines that help you meet the needs of your students.

CHAPTER THREE

Phases for Design and Implementation

Behaviors that occur across a variety of activities during the school day provide more opportunities for generalization....

Four phases provide a framework for designing and implementing self-management components (see Table 2). During Phases 1 and 2 teachers design and plan the instruction. During Phase 3 students are taught how to self-manage their behavior. During Phase 4 teachers conduct follow-up assessments.

1. Select the Behavior for Self-Management

Phase 1 provides guidelines for selecting behaviors the teacher wants to change through the use of self-management. Within this phase, teachers define specific behaviors, identify the desired level of response proficiency, measure students' current performance of the behavior, and confirm that the identified behavior warrants intervention using self-management procedures.

Identify and Define the Behavior

Identify and define the behavior to be self-managed. Although it could be argued that students should ultimately be able to self-manage many of their behaviors, careful selection of initial targeted behaviors increases the likelihood that you and your students will have a successful experience with self-management techniques (see Table 3). Thoughtful selection also ensures that the behaviors chosen can have the greatest

Table 2

Designing and Implementing Self-Management Systems

DESIGN AND IMPLEMENTATION PHASES
PHASE 1: Select the behavior for self-management. Identify and define behavior to be self-managed. Determine mastery criteria. Measure current performance levels of the behavior of concern.
PHASE 2: Prepare to teach self-management. Determine the type of self-management component. Develop the self-management component.
PHASE 3: Teach the student self-management using 10-step process. Introduce the behavior to be managed. Introduce the self-management documentation device. Provide practice and assess mastery.
PHASE 4: Evaluate the student's performance. Assess performance of the behavior. Assess maintenance of self-management.

impact on students' participation and learning at school, at home, and in the community. By inviting parents, caregivers, and the students themselves to help select behaviors, you may better identify those that have the broadest impact on students' performance across a variety of activities and settings.

Most of our discussion here is presented in terms of on-task, positive behaviors you hope to increase. You might also design a self-management strategy in terms of off-task or negative behaviors you want to decrease. The guidelines in Table 3 assume your selected "behavior to be self-managed" is a positive, desired behavior.

Select Functional Behaviors With Meaningful Social Value

Student behaviors should be chosen because their performance is important to the student's participation in present or future settings. Behaviors that occur across a variety of activities during the school day provide more opportunities for generalization and may affect the student's independent performance across a range of settings. Social behaviors are both functional (because interactions occur throughout the day) and have meaningful social value (they are important for making friends).

Table 3

Guidelines for Selecting Behaviors for Self-Management

Select behaviors that:

- are functional and have meaningful social value.
- are important to the student.
- have frequent or consistent performance opportunities.
- are manageable in relation to the students' characteristics and situational demands.
- can be defined, counted, evaluated, *and* described clearly.

Select Behaviors Important to the Student

Some behaviors may not be a priority from a teacher's perspective but may have great significance for students. Whereas you may wish to focus on academic or classroom behaviors, students may be interested in social behaviors (e.g., initiating conversations and placing phone calls to their friends) or extracurricular activities (e.g., singing in the chorus or participating in after-school activities). Alternatively, you may be satisfied with a student using manipulatives to solve math problems, but the student may want to learn to use a calculator. The issue is not one of ignoring one behavior to teach another, but of listening to students' preferences. Teachers accustomed to making these types of decisions for students may find themselves acquiring a new teaching behavior: Ask the student! (Or ask the family what the student prefers.) Students' participation in choosing behaviors to self-manage may lead to greater commitment to learn and increased rates of achievement.

Select Behaviors With Performance Opportunities

Select behaviors with frequent or consistent performance opportunities. Selected behaviors may be important because of the frequency or consistency of required performance. Behaviors are deemed frequent if there are multiple opportunities to perform the behavior either within a single daily session (e.g., number of math problems completed) or across a variety of activities spanning the school day (e.g., raising hand for permission to speak). Behaviors are considered consistent if they occur only once in a day but are part of each day's routine (e.g., arrival routines such as storing materials, paying for lunch, beginning warm-up activities).

Select Behaviors Manageable for Student

Select behaviors that are manageable in relation to students' characteristics and situational demands. *Manageable behavior* is used here as a general term to designate behaviors that will likely be affected by the use of self-management. Think in terms of behavior that is manageable for students and teachers *or* manageable within the context of instruction. Considerations for selecting manageable behaviors include: the number of steps within a behavioral sequence, the total number of separate behaviors targeted for self-management, the intensity of the behavior, whether the student is physically and cognitively capable of performing the behavior, whether the student has prerequisite skills, the anticipated length of time required for behavior acquisition (e.g., 1 week, 1 month, 1 year, 2 years), whether support staff are needed, and whether the

behavior typically occurs in a given instructional setting in the presence of the educator.

Teachers inexperienced with design and implementation of self-management systems may have better success initially by limiting the scope of the intervention. Similarly, students unaccustomed to using these methods to self-manage their behavior may have better success if the specified behavior is one they feel capable of changing and for which they can see changes in a relatively short length of time.

Select Behaviors You Can Define, Count, Evaluate, *and* Describe Clearly

Selected behaviors should be described in terms that allow the students to understand what the behavior looks like, sounds like, and feels like. You may initially spend considerable time figuring out how to define, count, evaluate, and describe behaviors for students. But this is time well spent. Students will benefit if you can describe simply and concretely what on-task behaviors you are looking for.

Specific examples of what the behavior does and does not look like help students to have a clear picture of what they should be doing and what they should not be doing. Behaviors must be observable and measurable so that changes in the behavior can be evaluated. Behaviors may be continuous in nature, such as being on-task, or they may be discrete in nature, such as following the steps in preparing to go home or counting the number of times students raise their hands. Alternatively, behaviors may be specific (e.g., a certain sequence for solving a math problem) or general (e.g., sets of behaviors for getting ready for the next class).

Determine Mastery Criteria

Once a desired behavior has been identified and defined, you will want to establish the mastery criteria: What would indicate a skillful or effective performance of the behavior? To establish mastery criteria, consider: a student's prior performance of the behavior; the behavior proficiency needed to continue in present settings and/or to proceed to new settings; the performance needed for task completion; typical performance for same-age peers in similar situations; short- and long-term goals identified by the student; and the behavior proficiency desired by the student.

Mastery criteria may change as the student's proficiency increases, and these changes may be incremental. For example, one parent of a child with autism targeted completion of a four-step morning routine as the desired behavior for her son. His self-monitoring checklist included combing his hair. Seeing the result of his first independent combing attempts, his mother was tempted to require a more skillful (or stylish) performance of this behavior. But being so pleased that he was performing all four tasks in his morning routine by himself (and without her reminders), she decided to accept his new style (and was hopeful his classmates would, too). At this point her criteria was a plain and simple "comb hair." Criteria soon could change to include a particular combing technique.

Measure Current Performance Levels

Measure current performance levels of the behavior of concern. In several observation sessions, teachers obtain current performance levels of the target behavior as it occurs before the student learns the self-management techniques. The performance provides a baseline against which future changes of the behavior are compared. If initial observations reveal that the student's performance of the targeted behavior is not really substandard, you will need to further

study: What is the real behavior of concern? If baseline data confirm that the targeted behavior is a concern, proceed with the remaining phases of the self-management intervention.

The behavior that the teacher measures during baseline may or may not be the same behavior, or set of behaviors, that the student manages (documents).

Same Behavior Measured by Teacher and Student

A teacher may identify the behavior of concern as the number of times a student talks out without permission, and the student may be self-recording the number of talkouts without permission. The teacher uses event recording (i.e., number of talkouts without permission) to collect baseline data and continues collecting those data during the intervention phase—when the student is using self-monitoring—to determine whether the intervention has the desirable effect on number of talkouts. When the student begins using self-monitoring, he or she is also recording talkouts. In this situation, the behavior of concern (number of talkouts without permission) that the teacher is measuring during baseline and intervention is the same as the behavior the student will learn to self-manage (using self-monitoring of the number of talkouts).

The teacher decides what aspect of the behavior of concern is of greatest relevance by considering whether skillful performance is indicated by the quantity (e.g., how often, how long, how many) or quality (e.g., neatness, accuracy, intensity, sequence, fluency) of the behavior, or some combination of behavior quantity and quality. It is possible that the behavior of concern is a desired increase (such as on-task), a desired decrease (such as inappropriate responses), or a combination of the two (such as number of problems correct and number of errors). Once this has been decided, the educator records the data and places the data on a graph to obtain a visual display of the behavior. These procedures (see Table 4) continue throughout instruction to document whether changes in the specified behaviors occur as students use the self-management system.

Different Behavior Measured by Teacher and Student

Some teachers will be collecting baseline data on behaviors that are not identical to those the student will be monitoring during self-management. For example, a teacher's baseline observation may note the number of assignments a student is completing during the morning seatwork period. Throughout baseline observation and subsequent intervention, the teacher continues collecting data on the number of completed assignments to determine if the self-management instruction is bringing about the desired behavior change: an increase in the number of completed assignments.

When the student begins the self-management training, however, the student may be documenting both on-task and off-task behaviors during the morning seatwork period. Though the intervention focuses on the behavior of assignment completion, the student is monitoring whether he or she is on- or off-task during the morning seatwork period. Ultimately the teacher gathers classroom data that indicates whether or not the self-monitoring of on- and off-task behaviors influences the number of assignments the student completes.

2. Prepare to Teach Self-Management

Phase 2 contains guidelines for planning and preparing the self-management procedures and materials that students will use.

Table 4

Measuring Behaviors of Concern

WHAT TO DO	CONSIDERATIONS
Identify the behavior of concern.	• quantity—how often, how long, how many • quality—neatness, accuracy, intensity, sequence, fluency • combination of quantity and quality
Select data collection or recording method.	• event—frequency count, occurrence, or sequence • duration—how long (total or per occurrence) • latency—duration until behavior is initiated • interval or time sampling—occurrence within or at end of specified time segments within the session • permanent product—using scoring criteria for neatness, accuracy, intensity, sequence, number
Develop documentation form for recording observations of the behavior the student will be self-managing.	• student's name • observer's name • date, time of start and stop • behavior • measure used • codes with legend • directions for using form to record observations
Collect data on the student's behavior performance before self-management is introduced (i.e., baseline data).	• use data collection form • gather within existing instructional and setting conditions • continue for 3 to 5 sessions/days or until a trend or stable level of behavior is evident
Graph data.	• label vertical axis with the behavior measure • label the horizontal axis with date/session • plot data points • connect data points
Collect and graph data on the student's behavior performance after self-management is introduced (i.e., intervention data).	• draw vertical line to indicate when intervention begins or other intervention changes occur • plot data points • connect data points • make decisions about the effectiveness of self-management

Choose Self-Management Component

The type of self-management used depends upon the student, the desired behavior, and the goal of the intervention. In fact, it is possible that all three self-management components could be used to affect change in one behavior, depending on (1) how the teacher wants to use the self-management component and (2) the individual student's characteristics. For example, a teacher may identify "completes three tasks within 15 minutes" as the desired behavior. Self-monitoring would be used if the student records whether she is on-task or off-task. Self-evaluation would be used if the student records how well tasks are completed (all completed well, some completed well, only one completed well). Self-reinforcement would be used if the student rewards herself with 5 minutes of computer time when all three tasks are completed well by the end of the 15 minutes.

The next section describes each of the three self-management components and provides examples that can guide you when making decisions about which type of self-management to use (also see Table 5 for several guidelines to determine which type of self-management system to use).

Teachers are encouraged to (1) focus less on selecting the "right" type (because more than one type may be a good place to start), (2) focus more on selecting meaningful desired behaviors, (3) consider individual student characteristics and preferences when deciding which type would be most appropriate, and (4) remain vigilant of student responses to the type selected so that changes can be made when data indicate that desired results are not occurring.

In *self-monitoring* the emphasis is on whether or not the specific behavior has occurred. This includes the repeated performance of a behavior within a short amount of time (e.g., number of math problems completed, number of hand raises during class discussion), completing steps in a sequence (e.g., morning arrival activities, steps to solve math problems), or performing a behavior at specified points in time (e.g., staying on-task or working when "beep" sounds at random intervals).

In *self-evaluation* the emphasis is on whether behavior has occurred in a prescribed manner. This includes the quality of a behavior (e.g., appropriateness of interactions), the amount of effort expended (e.g., working hard, very hard, or hardly working!), or the amount of work or tasks completed well (e.g., everything was done to criteria, most tasks were completed to criteria, or minimal work was satisfactorily done).

In *self-reinforcement* the emphasis is on students' self-selecting and administering a predetermined reinforcer after deciding that performance standards have been met. Ensure that the student understands the self-monitoring (how much work was done) and self-evaluation (at what quality) components prior to using self-reinforcement. Understanding can be demonstrated by answering questions, role-playing, or by direct observation of student performance. In some instances it may be possible to quickly reteach self-monitoring and/or self-evaluation. Some students may not need much, if any, time using either of these systems and can go directly to self-reinforcement.

Develop the Self-Management Component

To develop the self-management component, you complete three tasks. (1) Finalize the behaviors students will be managing, and ensure you have concrete ways of explaining the procedures and

Table 5

Guidelines for Selecting the Appropriate Self-Management Component

	IDENTIFY BEHAVIOR	EVALUATE BEHAVIOR	REINFORCE BEHAVIOR
Self-monitoring	yes	no	no
Self-evaluation	yes	yes	no
Self-reinforcement	yes	yes	yes

+

SELECT THIS TYPE	... IF THE STUDENT'S AWARENESS LEVEL OF HIS OR HER BEHAVIOR SEEMS AT THIS LEVEL.
Self-monitoring	Student is not aware of how many times, how much, or when he or she is exhibiting a behavior.
Self-evaluation	Student seems to be aware of quantity of behavior, and the teacher wants the student to focus more on the quality of the behavior.
Self-reinforcement	Student seems aware of quantity and quality of behavior, and the teacher wants the student to take more responsibility for increasing those aspects and rewarding him- or herself.

materials to students. (2) Set a schedule for when students will engage in the self-management training; how often or when will they record what they do during the designated period of time? (3) Construct materials and devices that students will use to document what they do.

Finalize Behaviors to Be Managed and Descriptions

When planning procedures, you should determine key behaviors that students will "manage" during the self-management process. You may approach this planning process from different perspectives. For example, a teacher may be quite certain what behavior she does not want the student to do, or what behavior she wants to change, but may not have thought through which examples of that behavior will be used to communicate to the student. As noted earlier, for the student it is important to define clearly both the behavior and how that behavior will be monitored, evaluated, and/or reinforced. The following suggestions may assist you in finalizing explanations. Note that suggestions 2 and 3 are refine-

ments of activities teachers began during Phase 1 in determining mastery criteria.

1. Conduct a task analysis. Sometimes a task analysis of the behavior the student will monitor is helpful to identify sequential actions and make clear descriptions.
2. Decide what a "best" performance of the behavior to be self-managed looks like (e.g., "This is what it looks like when all morning routines have been completed well").
3. Decide what an inappropriate performance looks like (e.g., "This is what a messy or incomplete assignment looks like").
4. Narrow the scope of the behavior to be self-managed. Identify steps and/or sequences used to perform the behavior, and consider introducing self-management in relation to a more narrowed scope of a behavior (or set of behaviors). It is better to select only one behavior, or category of behaviors, at a time. For example, a teacher might identify 24 or more distinct student behaviors that indicate that a student is "on-task," but initially the teacher should narrow these to a critical few (what three behaviors are most important, functional, manageable, can be clearly described, counted, etc.?) that the student will focus on performing.
5. Identify how to communicate clearly to the student the behaviors he or she will be managing. Decide how to explain and show performance criteria to the student, and consider the student's receptive and expressive language performance as guidance when deciding how to communicate with the student. A clear and concrete explanation ensures that the student is likely to (1) make an accurate decision about whether or not the behavior occurred (for self-monitoring), (2) identify the quality of the behavior (for self-evaluation), or (3) determine that "enough good behavior has occurred that it's time for a reward" (for self-reinforcement).

Set Schedule

Identify the time of day, period, instructional session, or situation during which the student will self-manage the specified behavior. Initially limit the self-management technique to a specified time period so that its use can be verified as effective, its effects can be sufficiently monitored and reinforced, and changes to ensure effectiveness can be determined and applied. It will be more time-efficient and cost-effective to "make sure it's working" within a limited time period during the day than for a teacher (and the student) to use a new system all day long. Once it has been established that the self-management component is used appropriately and successfully during one time period, you should immediately promote and prompt its use as appropriate throughout the day and across behaviors.

Determine how often or when (e.g., the time intervals) the student will use self-management within a session. How often within the activity will the student stop to record his or her behavior?

As you determine the interval between stops, consider what's practical to your particular classroom setting and whether that selection gives an adequate sample of the target behavior's occurrence. It may not be necessary for students to record every instance of the target behavior for them to realize that they do it "not enough" or "too much." But if the selected time interval is not capturing enough of a sample of the behavior to catch the student's attention, then the teacher may want to consider switching to either a more frequent schedule (e.g., student notes his or her performance more frequently) or another time period (e.g., another time during the day when the need for the behavior is more frequent).

Self-monitoring. The teacher needs to plan when a student will record the occurrence of a behavior. Event recording may be used if a student notes every occurrence of a desired or undesired behavior. ("I just talked out without raising my hand.")

Time sampling may be used if a signal is given (some teachers make tape recordings with periodic "beeps" to provide an audible signal) that prompts the student to think about what they're doing right then, and then record the occurrence or nonoccurrence of the target behavior. ("There's the signal. What was I just doing?") Students may pause at specified time intervals to note whether continuous behaviors (e.g., working quietly) are occurring at that moment in time. Kitchen timers or computer programs may be used to signal the "stop." Also consider pocket timers, a bell, verbal prompts, and timers that automatically reset at the end of preset intervals.

Interval recording may also use some type of signaling system that prompts the student to think back about the previous time lapse and note whether the target behavior occurred, or not, at any time during the specific time period. ("I just heard the signal. Have I been doing my work during the time since I last heard the signal?")

Self-evaluation. All of the methods described for self-monitoring can also be used to cue students during self-evaluation. Students may stop to record behavior after completion of each step in a sequence (e.g., steps in a math problem). Signals such as hearing audible prompts, coming to the end of each page or the end of each task, or maybe reading until you see words in bold print can be used. Start with more frequent interval lengths and then move to less frequent as proficiency is demonstrated.

Self-reinforcement. If they have completed enough of their work to a high quality, some students may need immediate reinforcement. Immediate reinforcement may be necessary initially to motivate the student and to ensure the student recognizes the relationship between the desired behavior and the reward. Eventually the teacher will increase the amount of time so that students can put off rewards until more convenient or appropriate times. Some teachers have given students "tickets" or "coupons" or another type of representation of the reward that can be traded in for the reward itself at the end of the period, at the end of the day, or at some other appropriate time.

Students should also be encouraged to verbalize positive statements about their work when a predetermined standard has been met. These verbalizations may need to be taught to students, especially those who have a history of academic failure and do not automatically congratulate themselves on a job well done. Such self-reinforcing comments can also help a student realize that effort results in improved performance, which can in turn increase persistence on tasks.

Construct a Documentation Device

Students need a way to record or document their use of self-management procedures. Paper and pencil formats are appropriate for many students and behaviors. Manipulative items or technology-based systems may also be used. As students complete each step in the procedure, they note their performance by marking some type of form

> Students with autism used pictures to manage their daily living skills. They learned to generalize behaviors and to continue their performance even when a teacher was not present.
>
> — Pierce & Schreibman (1994)

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(e.g., a checklist noting behaviors performed, an index card to record the occurrence or nonoccurrence of the target behavior), manipulating objects (e.g., placing tokens in a cup, moving beads on a string), or using technology (e.g., pushing a button on a counter, pressing a key on a computer keyboard, speaking into a tape recorder).

Self-monitoring. To monitor themselves students record the occurrence or nonoccurrence of individual behaviors or a sequence of behaviors. A variety of simple and readily available formats can be used, such as tally sheets, wrist counters, or index cards (see Figures 3 and 4 for examples of self-monitoring forms). Some may be large and have pictures, words, or symbols that relate to the target behavior (typically used with younger students or students with severe disabilities). Consider recording devices that allow students with developmental disabilities to mark a form or photo, press a counter, put a ring on a dowel rod, move beads on a bracelet, or take a token or coin or sticker.

Self-evaluation. Students use the self-evaluation device not only to note a behavior's occurrence, but also to identify the quality of their performance. The device usually includes evaluation parameters that correspond to mastery criteria for the behavior to be self-managed and a scale that rates performance quality. A rating scale from 0 to 2 is suggested for young children because it requires less discrimination. Scales might also range from 1 to 5 or use symbols or pictures. Written directions or prompts, pictures, or symbols may be necessary at first, but can often be faded once students know how to use the form. Refer to Figures 5 and 6 for examples of rating scales.

Figure 3

Sample Self-Monitoring Form for On-Task Behavior

Student's name: _____ Date: _____

Ask yourself: **"Was I working?"**
Check yes or no when you hear the beep.

	1	2	3	4	5	6	7	8	9	10
☺ **YES**	✓		✓	✓	✓		✓		✓	✓
☹ **NO**		✓				✓		✓		

Variations:

Was I **paying attention?**
Was I **on time?**
Was I **listening?**

Did I **turn in my homework?**
Did I **raise my hand?**
Did I **wait to be called on?**
Did I **bring my materials?**

I had **a positive attitude.**
I had **appropriate adult interactions.**
I am **on-task.**

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Figure 4

Sample Self-Monitoring Form for Doing Work

Student's name: _____ Date: _____

When I hear the beep:

If I am doing my work, I mark "Y" for yes.

If I am not doing my work, I mark "N" for no.

1	2	3	4	5	6	7	8	9	10
Y	Y	N	N	Y	Y	Y	N	Y	Y

Number of times I was working. (Count the "Y"s.) 7

My goal was 8

Did I meet my goal? no

My goal for tomorrow is 8

Figure 5

Sample Rating Scale for Self-Evaluation

Student's name: _____ Date: _____

Directions: At the end of each work session, mark how well you think you worked during that time.

POOR ☹	OK 😐	VERY GOOD ☺

Figure 6

Sample Self-Evaluation Form: Class Work

Student's name: _____ Date: _____

How well did I work in each class today?

My goal: I will get _____ smiley faces today.

	☺	–	☹
Reading			
Writing			
Math			
Social Studies			
Science			
Art			

Set a goal for working tomorrow. How many smiley faces for tomorrow? _____

Self-reinforcement. It often will be possible to use the same data collection system that has been used for self-evaluation, but with some type of mark to show when a reward will be earned. Refer to Figure 7 for an example of a self-reinforcement form.

Select rewards and be prepared to periodically select new rewards to avoid students becoming bored with the reinforcer. Rewards do not need to be costly to be effective. Involve students in selection to ensure that the reinforcers are motivating. Students can also help determine when they will reward themselves. What quality and/or quantity of the desired behavior will result in a reward?

To avoid students being too lenient on themselves, you initially may want to select the standard that results in a reinforcer while also talking with students about how to set up realistic challenges for themselves. Ask questions such as these as you set standards for rewards: (1) How many correct problems are worth a point? (2) At the end of the period, how much work has been completed? (3) How many minutes should I work before I take a break? Interestingly, some students who set goals for themselves that the teacher believes are too high make greater gains than when the teacher sets goals. Elicit student involvement whenever—and however—you can to maximize student choice and promote student responsibility.

Figure 7

Sample Self-Reinforcement Form

Student's name: _____ Date: _____

Directions: Place a checkmark ✓ in each box after you do a math problem. Take a 1-minute break (use the clock) when you reach the REWARD box. Then go back to work on the math problems.

1	2	3	4	5	6	7 **Reward**	8
9	10	11	12	13 **Reward**	14	15	16
17	18 **Reward**	19	20	21	22	23	24 **Reward**

3. Teach the Student to Use Self-Management

Phase 3 involves a 10-step process for teaching students to self-manage specified behaviors (see Table 6). The 10-step instructional process is the heart of self-management for students with developmental disabilities. Elements of direct instruction (such as demonstration, modeling, guided performance, independent performance, positive and corrective feedback, and comprehension checks) are incorporated into the instructional process to teach the students how to use self-management and to assess their mastery of it in controlled and authentic situations. Training should (1) ensure students' understanding of expectations for performance of the desired behavior, (2) introduce the self-management procedures and materials, and (3) provide practice opportunities within a supportive context.

Students typically require a total of 1 to 3 hours of direct instruction in self-management procedures before they are able to use the procedures independently in school settings. Students may benefit more from short and frequent training sessions (e.g., four 30-minute sessions across several days) than from longer and less frequent training sessions (e.g., two 1-hour sessions). Student-learning characteristics,

> A total of 2 hours (30-minute sessions across 4 days) was sufficient to teach students with mild to moderate mental retardation how to use self-monitoring.
>
> — McCarl, Svobodny, & Beare (1991)

previous experiences with self-management procedures, and the complexity of the self-management system will affect the amount of time needed for student mastery of the system.

Introduce the Behavior to Be Managed

Name the Desired Behavior and Demonstrate Examples and Nonexamples

First you identify or "name" the behavior to be self-managed and demonstrate examples and nonexamples, so the student will know what the behavior is and what the behavior isn't. It is important to describe specific expectations for students' performance of the desired behavior.

> Examples and nonexamples of on-task behavior were modeled while training the students to use self-monitoring. This was important to ensure that students could accurately discriminate their desired behaviors during self-monitoring.
>
> — Hughes & Boyle (1991)

"This is what to do to clean up your work area. First, put your journal in the journal box. Next, put the pictionary on the shelf. Last, put your pencil and crayons in your desk."

Table 6

Teaching Students to Use Self-Management

10-STEP INSTRUCTIONAL PROCESS
Introduce the behavior to be self-managed.
1. Name the desired behavior and demonstrate examples and nonexamples.
2. Discuss the benefits of the desired behavior.
3. Provide practice of the desired behavior and name the mastery criteria.
Introduce the self-management documentation device.
4. Describe the self-management procedures and materials and the system's benefits.
5. Model the self-management system while performing the desired behavior.
Provide practice and assess mastery.
6. Provide guided practice for using the self-management procedures and materials; role-play the desired behavior.
7. Assess student's mastery of the self-management system within the role-play situation.
8. Discuss the specific situation in which self-management will be used.
9. Provide independent practice opportunities.
10. Assess student's mastery of self-management within the specified situation.

Discuss the Benefits of the Desired Behavior

"When you clean up well and promptly, then I can find your paper and tell you what you did well." Or, "...you can find your materials quickly the next time you need them." Or, "...your classmates can find the pencils and crayons." It is important to discuss with students how their improvement in the target behavior can benefit them. Students need to be informed of rationales that can make their use of self-management worth their while.

Provide Practice of the Desired Behavior and Name the Mastery Criteria

Direct students to demonstrate the target behavior under a structured circumstance. "Show me how you clean up your work area." Although desired behaviors should already be in students' repertoire, this is an opportunity for students to relate the "name" of the behavior(s) and the expected performance of the behavior(s). In effect, students demonstrate to themselves that when given a prompt from the teacher, they can perform the desired behavior. The teacher also tells students the criteria that indicates a masterful or proficient performance of the behavior. "To do a good job cleaning up, you should take less than 2 minutes to put all three items in the proper place without talking, and return to your seat."

Introduce the Documentation Device

Describe Self-Management Procedures and Materials and Their Benefits

Show the students the forms and other documentation devices you have constructed to facilitate their self-management process. Describe the benefits of self-management, emphasizing the student's role in the process and anticipated outcomes. Explain symbols (or pictures or words) on the documentation device and their relationship to the desired behavior(s). Describe how and when the self-management system will be used. "This is a sheet that will help you remember to clean up your materials after you have finished your work. This picture reminds you to put your journal in the journal box. This picture reminds you to put your pencil and crayons in your desk. This picture reminds you to put the pictionary on the book shelf. After you put away each item, place a check beside the picture. Then look at the next picture to see what should be done before the 2-minute timer sounds."

> During training, mastery of steps in self-management was necessary before students could proceed to the next phase.
>
> — Pierce & Schreibman (1994)

Model Self-Management While Performing the Desired Behavior

As you model, demonstrate the actions students will use and verbally describe what you're doing and why. This technique is called "think aloud." Modeling the behavior using a think-aloud format is an effective way of teaching students how to guide themselves as they determine if they have exhibited desired target behavior. "Okay, I've just heard the 'beep.' Now I have 2 minutes to put away my materials and return to my seat without talking. Let me see, my teacher and I talked about where the materials belong. My journal goes in the journal box; my pencil and crayons go in my desk; the pictionary belongs on the book shelf. I better get started. [Put away materials.] I'm done and the timer hasn't gone off yet. I can check each box, because I put away my materials, didn't talk to anyone, and met the time limit!"

For self-evaluation, you clearly state how you

decided whether the behavior performance met the preset criteria. Similarly for self-reinforcement, "the think-aloud" should include why a reinforcer was or was not earned. Before proceeding to guided practice, you may engage the student in the modeling process, asking students to imitate the think-aloud while trying out the self-management system. The intent here is not for students to demonstrate mastery but to demonstrate briefly an understanding of the procedures.

Provide Practice and Assess Mastery

Provide Guided Practice and Role-Play

Provide guided practice for using the self-management procedures and materials; role-play the desired behavior. Role-playing typical classroom scenarios with students helps to ensure that students know what to record, how to record it,

Table 7

Assessment Checklist for Students' Mastery of Self-Management

INDICATORS OF MASTERY DURING GUIDED AND INDEPENDENT PRACTICE	YES	NO
1. Does the student identify examples and nonexamples of the desired behavior?		
2. Does the student demonstrate examples and nonexamples of the desired behavior?		
3. Does the student demonstrate use of the self-management procedures and materials while performing the desired behavior during practice opportunities?		
4. Does the student use the self-management procedures and materials accurately? (Teacher concurrently fills out the documentation device with the student to check student accuracy.)		
5. Can the student describe the benefit of the desired behavior?*		
6. Can the student describe the benefits of the self-management system?*		

Note: * optional assessment criteria as determined by a student's verbal abilities to respond

and recognize the situations in which they need to exhibit the desired behavior.

Assess Mastery of Self-Management Within Role Play

Prior to using self-management in the actual class situation, students should be able to use the procedures and materials with 100% accuracy during the guided practice role-play sessions. Students who cannot independently perform during guided practice are more likely to have difficulty using the system during an authentic class activity. This up-front time investment to ensure that students know when to self-manage, why to self-manage, and how to self-manage is offset as students quickly transfer what they've learned to a real environment. Lack of time investment at this point can result in the need to reteach training sequences later.

To assess mastery, you may complete the documentation device simultaneously with your student. Then compare your findings, discussing similarities and discrepancies, to determine the accuracy of the student's self-management. Table 7 contains a checklist of questions for determining student mastery of the guided practice (role-play) step. If the answers to all nonoptional questions are yes, the student is ready to proceed to independent practice within an authentic situation. If the answer to any of the nonoptional questions is no, provide additional instruction that corresponds to the identified area of weakness.

Discuss Specific Situation in Which Self-Management Will Be Used

Initially target one situation or time during the day in which students should use the self-management system. Have plans to extend the use of self-management to other parts of the day (this could also include home situations) once the student is proficiently using the techniques. "I think using the checklist to put away your materials would be helpful following Writer's Workshop. In which class do you think it would be most helpful? We can begin with one and add another later."

Provide Independent Practice Opportunities

After students demonstrate mastery of the self-management procedures and materials in role-play situations and an authentic situation has been identified, have students use the self-management system independently—to effect performance of the desired behavior within the specified situation.

> Some teachers are concerned that students cannot accurately monitor their behaviors. Hughes and Boyle (1991) found that students accurately monitored their on-task behaviors with high rates of student-observer agreement.

Assess Mastery of Self-Management Within Specified Situation

Initially, you may monitor the accuracy of student's documentation by using a duplicate form to record performance of the desired behavior. As discussed previously in the instructional principles, students' documentation accuracy may be monitored formally each day for the first three to five sessions. If documentation is accurate, then formal monitoring may be reduced to once or twice per week and eventually eliminated. Improvement may occur in target behaviors even when students do not accurately document their behaviors, but you should address inaccurate use of the system if behaviors do not improve as desired. For the independent practice, you may again use the checklist of

questions for determining student mastery (refer to Table 7). If the answers to all nonoptional questions are yes, the student should continue self-management in the specified situation; you may look ahead to maintenance and generalization. If your answer to any of the nonoptional questions is no, provide additional instruction that corresponds to the targeted situation.

4. Evaluate Student's Performance

Evaluation is Phase 4 of designing and implementing a self-management system. The primary indicator that a self-management component is effective is that the student's behavior changes and proficient performance continues when explicit instruction stops. To monitor short-term effects of the self-management component, measure the performance levels of behaviors as they occur within real situations (not role plays). To monitor long-term effects of self-management, refer to unprompted use of the documentation device and/or continued mastery performance of behaviors.

Assess Performance of the Behavior

To assess behavioral changes, continue to use the data collection and measurement procedures used during Phase 1 (refer to Table 2). As has been noted earlier, sometimes you are measuring the same behavior that the student is managing (e.g., teacher is measuring on-task and student is monitoring on-task), and sometimes you may be measuring a different behavior than the one the student is managing (e.g., teacher is measuring the number of assignments completed accurately, and the student is monitoring on-task behaviors).

By comparing current performance to baseline performance and to the identified mastery criteria, you can determine whether the specified behavior is changing as desired. The data display on a graph provides you with immediate feedback that can be used to make changes in the self-management procedures (see examples and discussion in chapter 2, instructional principles). If there is minimal or no improvement in specified behaviors, you may want to reexamine the documentation system, reteach steps in using the system, or investigate other possible explanations for the lack of progress. If improvement is occurring or mastery criteria have been achieved, proceed to maintenance and generalization of self-management to other behaviors or settings.

Assess Maintenance of Self-Management

If the full benefits of self-management procedures are to be realized, students must continue to self-manage target behaviors even after direct instruction and teacher monitoring of the process has stopped. Students who use documentation devices during independent practice without reminders from others are more likely to maintain their use during unmonitored situations. Many students gradually reduce their dependence on the self-management device itself as they become proficient at performing desired behaviors, remembering what is required without using an external system. Thus, over time, students' performance of desired behaviors at mastery levels indicates that they continue to self-manage, even in the absence of overt self-management systems. You should periodically observe, record, graph, and compare target behaviors to determine whether performance levels still meet criteria. If performance deteriorates, the self-management system should be reintroduced with greater attention to maintenance factors.

The next chapter describes several classroom scenarios when teachers and students use self-management techniques. The instructional principles described in chapter 2 are applied, and the design and implementation phases for self-management are illustrated.

CHAPTER FOUR

Three Classroom Scenarios

You can use self-management with students for many different behaviors and areas.

Self-Monitoring of Morning Routine

Charlotte, 6 years old, attends first grade in her neighborhood school. She spends most of her day with typically developing first graders; curriculum objectives are differentiated for her learning. The school year is just beginning, and Charlotte is accustomed to receiving step-by-step verbal instructions on completing morning classroom routines. Her special-education and general-education teachers, however, want her to assume more responsibility when she arrives in the classroom, especially because the set of daily morning routines will be used all year long.

Phase 1: Select Behavior for Self-Management

Charlotte's teachers first discuss exactly what they expect first graders to do when they enter the classroom in the morning. How much of the routine do they expect Charlotte to follow? They list what they expect of all students. Then they make a similar list for Charlotte. They choose responsibilities they know Charlotte can perform—although she usually waits for a teacher or peer to tell her to do them.

The behaviors they identify for Charlotte to complete independently during the morning routine are (1) goes directly to her desk when she enters the classroom, (2) gets her money together, looks at that day's menu (pictures of food items), and orders lunch, (3) puts her books, book bag, and coat away, (4) gets out

her morning seatwork, and (5) begins to complete her morning seatwork. They decide that their mastery criteria is that Charlotte has independently completed all five tasks—she has begun her seatwork—within 10 minutes of entering the classroom. Their current observations of Charlotte's performance indicate that she does not remember the sequence of the five tasks (event recording confirms that Charlotte completes no [0] tasks independently), and she needs approximately two verbal reminders to complete each task. A peer or adult usually reminds her what to do next—an average of eight verbal reminders each morning. Even with reminders, Charlotte usually takes about 20 minutes to get started on her morning seatwork. The targeted behavioral objective for Charlotte is:

> Given a pictorial self-monitoring checklist of five morning activities in first grade, Charlotte will complete each activity independently within 15 minutes of entering the classroom for 4 of 5 days per week for 3 weeks.

Phase 2: Prepare to Teach Self-Management

A self-monitoring component is selected because (1) Charlotte can do the tasks when she is reminded; (2) Charlotte appears dependent on others to remind her to do each task; and (3) the morning sequence of tasks can be depicted as a "yes, I've done that" or "no, I haven't done that" response set. The teachers develop a self-monitoring form that includes pictures of Charlotte's five morning tasks. The self-monitoring form accomplishes three things: (1) the pictures remind Charlotte of what she needs to do; (2) the sequence of pictures indicates the order in which Charlotte should do each task; and (3) her responses on the form can be checked off as "yes" or "no."

Charlotte's teachers have targeted this sequence: (1) Enter room and check off step 1 on the checklist, which is located on Charlotte's desk. (2) Get out lunch money and get in line to make lunch choice. (3) Put away book bag items, book bag, and coat. (4) Take out morning work. (5) Begin morning work. The checklist in Figure 8 was developed for Charlotte to use to record her performance (i.e., "yes" or "no") during self-monitoring.

Phase 3: Teach Student to Use Self-Management

Charlotte's teachers decide that the special-education teacher will take primary responsibility for teaching the self-monitoring technique to Charlotte. The special educator will take the lead with the instruction, and the general educator will provide supplemental feedback and reinforcement. Charlotte will be self-monitoring at 8:15 each morning, when she enters the classroom. Charlotte's teacher follows the 10-step instructional process described in the preceding chapter.

Introduce Behavior to Be Managed

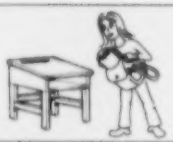
1. **Name the desired behavior and demonstrate examples and nonexamples.** Charlotte's teacher walks her through the five steps of coming into the classroom and completing the morning routine activities. The teacher also shows her what not to do. When performing the morning routines, Charlotte's teacher is verbally describing her actions to Charlotte.
2. **Discuss the benefits of the desired behavior (independent completion of the morning routine).** Charlotte's teacher tells her why it is important for Charlotte to get into class and get ready for the rest of the day on her own. Reasons, such as "It helps

Figure 8

Self-Monitoring of Morning Routines

Student's name: Charlotte Date: 10/15–10/19

Directions: Place a checkmark ✓ in the box after you finish each task.

TASK TO DO:	MON.	TUES.	WED.	THUR.	FRI.
GO TO DESK					
ORDER LUNCH					
 PUT THINGS AWAY					
GET OUT WORK					
DO WORK					

me to get more work done" and "I remember to order lunch so I can eat it later" and "I can find my books and jacket when I need them," may be verbalized for Charlotte to repeat. The rationale given to Charlotte should be direct, simplistic, and meaningful for her.

3. **Provide practice of the desired behavior and name the mastery criteria.** Next, Charlotte walks through the morning routine in both the right way (as an example of the behavior) and the wrong way. Charlotte and her teacher have some fun doing this by being silly when practicing the wrong way to complete the morning routines. They vary their practice. Sometimes the teacher demonstrates the morning routine and Charlotte labels it, and sometimes Charlotte performs the morning routine that the teacher gives her to do. "Show me ordering your lunch. Show me putting your things away."

Introduce Self-Management

4. **Describe the self-management procedures and materials and benefits.** Now Charlotte's teacher shows her the self-monitoring checklist with the pictures of the tasks Charlotte needs to complete each morning. They discuss how the self-monitoring checklist can help Charlotte remind herself of what she needs to do next when she enters the classroom.

5. **Model self-management while performing the desired behavior.** Charlotte's teacher "thinks out loud" as she uses the self-monitoring system. "Okay. I'm in the classroom, so now I need to go to my desk. There's my checklist—right on my desk. I've already done the first task, so I can check that off now. What's next? I need to order lunch. I need to get my money and line up to order lunch." Examples and nonexamples are again used while Charlotte and her teacher take turns talking aloud about what they're doing and what they need to do next.

Provide Practice and Assess Mastery

6. **Provide guided practice for using the self-management procedures and materials; role-play the desired behavior.** Although Charlotte and her teacher have already practiced several times already, now they practice the whole morning routine using the self-monitoring checklist in a role-play format. Modeling continues to occur as Charlotte and her teacher practice the behaviors and talk aloud about what they are doing: "What's next? Put things away. What do I need to put away? My sweater goes. . . ." Role plays include examples and nonexamples of following the sequence and correctly completing the targeted tasks, and Charlotte can now respond immediately when asked why she needs to learn to do things on her own in the morning.

7. **Assess student's mastery of the self-management system within the role-play situation.** While role-playing, Charlotte should be able accurately to show her teacher the complete targeted sequence, checking off the tasks after she completes each one. Before using the self-management system on her own in the classroom, Charlotte should demonstrate mastery of the tasks and the monitoring without prompts from the teacher.

8. **Discuss the specific situation in which self-management will be used.** Charlotte will be using the checklist right after she enters the classroom in the morning. Charlotte's teacher tells her this again and

quizzes her by asking her to identify when she'll use the checklist.

9. **Provide independent practice opportunities for using the self-management system.** On two mornings Charlotte's teacher directs her to practice using the checklist during the actual situation: the morning routine. Charlotte's performance during these two mornings indicates that she needs few verbal reminders, and those are directed at her using the checklist, not at her performing the next behavior. In other words, Charlotte's teacher is not focusing on the tasks Charlotte should complete; her focus is directing her to use her self-monitoring checklist.
10. **Assess student's mastery of self-management within the specified situation.** During the first week when Charlotte is using the self-monitoring checklist on her own, Charlotte's teachers take turns noting whether or not she completed each of the five tasks within 15 minutes of entering the classroom.

Phase 4: Evaluate Student Performance

Charlotte's teacher notes that, within 2 weeks of learning the self-monitoring system, Charlotte is independently completing the morning routines within 15 minutes. Periodically (e.g., twice a week for the next 3 weeks) the teacher checks to ensure that Charlotte is maintaining the high independent performance of morning routines. Thereafter, the teacher informally monitors Charlotte's morning behavior. As long as Charlotte continues to complete her morning tasks on her own using the self-monitoring checklist, there is no need to reexamine the system. If her behavior falters, however, revisions of the system, more frequent and/or more tangible reinforcement, or reteaching of accurate use of the system may be necessary.

Charlotte's teachers plan to use the self-monitoring checklist with her during other transition times during the school day by modifying the pictures. Charlotte's parents are considering using self-monitoring at home in the mornings to encourage her to get dressed and ready for school independently.

Self-Evaluation of Work Habits

Sean is a third-grade student who works on math, reading, and writing assignments during independent study time. Although he knows how to do the work during the 20-minute seatwork time, he does not consistently work without interrupting others (both his teacher and classmates), and all of his work is not consistently completed. Sean's teacher decides to use a self-evaluation system with him to help him learn to monitor the quality of his work habits during seatwork time.

Phase 1: Select Behavior for Self-Management

Sean's teacher, Ms. Scanlan, decides to target work completion. To complete work, Sean needs to exhibit good work habits. Sean's worksheets indicate that he gets about one out of three assignments completed during independent seatwork time, and that seldom are all assignments completed. Ms. Scanlan targets the following behavioral objective for him:

> Given three assignments to complete during independent worktime, Sean will complete each assignment for four of five sessions per week for 4 weeks.

Phase 2: Prepare to Teach Self-Management

Sean will use a self-evaluation system. The assignments he is to complete during a 20-minute

Figure 9

Self-Evaluation of Seatwork

Student's name: Sean Date: 10/15–10/19 Time 10:00 to 10:20 (Math)

Directions: Do the work for each math period. After you do the work, put a checkmark ✓ next to the number that tells how well you worked.

How well did I work on all 3 tasks? ☹ poor (0) — OK (1) ☺ very good (2)

DAY	DO TASKS 1, 2, AND 3	HOW WELL DID I WORK?
MONDAY	1. Do math worksheet. 2. Use math blocks for word problems. 3. Practice math facts.	0 ☹ ✓ 1 2 ☺
TUESDAY	1. Read math story 2. Do math worksheet. 3. Write answers to math facts.	0 ☹ 1 ✓ 2 ☺
WEDNESDAY	1. Practice math facts. 2. Use math blocks for word problems. 3. Do math worksheet.	0 ☹ 1 ✓ 2 ☺
THURSDAY	1. Practice math facts. 2. Copy problems on worksheet. 3. Do math worksheet.	0 ☹ 1 ✓ 2 ☺
FRIDAY	1. Use computer for math. 2. Do math worksheet with blocks. 3. Practice math problem drills.	0 ☹ 1 ✓ 2 ☺
MY GOAL: This week I want to earn 4 days of "2".	How many "2"s I got this week:	4 days

DID I MEET MY GOAL? ☺ ✓ **OR** ☹

Remember: Set my goal for next week.

Note to teachers: This self-evaluation device can be used for (1) the same task that the student does each day, (2) the same series of tasks performed each day, (3) a different task each day, or (4) a different series of tasks for each day [as shown].

seatwork session are listed on a documentation form. Next to the description of written assignments is a rating scale from 0 to 2. Sean will rate himself at the end of the 20-minute session on how well he worked during that session (see Figure 9).

Ms. Scanlan targeted a self-evaluation component because (1) Sean knows the work assignments he is to do, so a "yes or no" self-monitoring format seems too simplistic for him, and (2) the self-evaluation system allows Sean to reflect on how well he worked, so the quality of his work behaviors as he perceives those behaviors is being judged by him.

Phase 3: Teach Student Self-Management

Sean will evaluate his work performance at the end of the 20-minute seatwork session. Ms. Scanlan uses the 10-step process to familiarize Sean with both the behaviors he needs to exhibit consistently and the documentation device—how to determine his "work score" at the end of the seatwork period.

Introduce Behavior to Be Managed

1. **Name the desired behavior and demonstrate examples and nonexamples.** Ms. Scanlan labels and demonstrates to Sean what it looks like to work on assignments quietly and without interrupting others: looking at this worksheet, using materials (math counters, pencil, books, tape recorder, language master, etc.), and writing answers. She also demonstrates what it looks like to be noisy and bother other students during seatwork time.
2. **Discuss the benefits of the desired behavior.** At first, Ms. Scanlan is directive in telling Sean why it is important for him to work well. Using language and reasons that are understandable and meaningful to him, Ms. Scanlan discusses the following benefits of working well during independent work time:

   "I can get more work done."

   "When I get more work done, I can learn my words faster."

   "My friends can get more work done and learn more if I don't interrupt them."

   "If I learn more, I'll get better grades."
3. **Provide practice of the desired behavior and name the mastery criteria.** Sean shows his teacher what he will look like when he works well and without bothering other people. Sometimes Ms. Scanlan and Sean take turns showing what working well looks like. They also talk about how long Sean needs to work (for 20 minutes, or until he gets all three assignments completed and has turned them in). Mastery of "working well" is discussed in simplistic terms. Ms. Scanlan explains, "Working on your own means that you have not talked to anyone else; getting your work correct means that you have done all of it and checked it one time before turning it in; and working until the end of seatwork time means that you have not stopped working until either 20 minutes have gone by or the work is done."

Introduce Self-Management System

4. **Describe the self-management procedures and materials and their benefits.** Ms. Scanlan then introduces the self-evaluation scoresheet she has constructed for Sean. The rating scale is discussed and described as teacher and student continue to practice examples and nonexamples of "good work habits." Ms. Scanlan directly links the previously discussed benefits of Sean working

well to the scoresheet; the self-evaluation scoresheet will help Sean remember to work well and keep a record of how well he works during each session.

The ratings of 0 and 1 and *2* are described along with smiley faces and frowns. Examples and nonexamples of good work habits are compared to the ratings; varied qualities of behaviors are used to differentiate the ratings. For example, when Sean works for a few minutes, then talks with his classmates about a television program, and then continues to do his work, his rating should be 1 because he has worked some of the time, but not all of the time. A *2* rating should be earned when Sean works the entire 20 minutes, gets all assignments done, and does not talk with his classmates.

5. **Model self-management while performing the desired behavior.** The teacher talks about what she's thinking when she fills out the self-evaluation scoresheet after finishing the seatwork task. "I'm through with my work. Now I need to think about how I worked today. Did I get all my work done? Yes, I did. That's good. I can get better grades when I get all my work done. How many times did I talk with my friends? I didn't talk with them. I worked hard the whole time. Now I'm ready to score myself. What number should I give myself? I think I worked very hard today. I think I should get a *2*—the best score. Did I do my best work? Yes, I think I did. I'll give myself a *2*. Now I'll show my teacher how much work I did and how I scored myself."

Provide Practice and Assess Mastery

6. **Provide guided practice for using the self-management procedures and materials: role-play the desired behavior.** Sean and his teacher practice using the self-evaluation scoresheet by pretending to work hard, not-so-hard, and not very well at all. They then both rate the session and compare their ratings to see how well they matched.

7. **Assess student's mastery of the self-management system within the role-play situation.** Sean must be able to show Ms. Scanlan (1) good work habits and rate himself with a 2; (2) not-so-good work and some talking and rate himself with a 1; and (3) hardly working with lots of talking and rate himself with a 0 during role-play situations. Sometimes during guided practice Sean watches other students work and rates them, and sometimes Sean role-plays with his peers and has them rate him.

8. **Discuss the specific situation in which self-management will be used.** Sean and Ms. Scanlan agree that he will be using the self-evaluation scoresheet at the end of each math seatwork session. The time period for this is 10:00 to 10:20 each morning.

9. **Provide independent practice opportunities for using the self-management system.** At 9:55 the next day, Ms. Scanlan briefly rehearses with Sean which assignments he needs to complete (these are listed on the self-evaluation scoresheet), what work habits he needs to exhibit when completing the assignments ("Do all my work and don't talk to anyone about other things"), and how his work habits during the next 20 minutes will be used by him to rate himself at the end of that work period. On *2* days Ms. Scanlan meets with him at the beginning of the session to discuss the procedures and review what he is supposed to do. For those *2* days, Ms. Scanlan monitors his work habits closely and reinforces him for working well—or

reminds him of how his working well now means he can give himself a *2* rating at the end of the work period.

10. **Assess student's mastery of the self-management system within the specified situation.** On the first day Sean worked very well and gave himself a *2*. On the next day he worked okay (he talked with some friends about 10:12 about what game they would play during recess) and gave himself a rating of 1. Ms. Scanlan discusses his ratings with him, praises him for his honesty, and talks with him about setting a goal for the next day's work.

Phase 4: Evaluate Student Performance

Meanwhile, Ms. Scanlan is monitoring how well Sean is performing relative to her original objective for Sean: that he get all three assignments completed. Sean's teacher is keeping up with Sean's scores on his assignments, how much work he is getting done during seatwork, and how many times she must stop teaching another group to remind Sean to get back to his seatwork. Sean's grades are improving and she infrequently needs to remind him to do his work. Sean is also beginning to set goals for himself at the beginning of each day for the score he wants to work for that day, and he is setting weekly goals for how many "top scores" he plans to get the next week.

Self-Reinforcement for Accurate Work

Max, a fifth grader, is working on computations of basic math facts. He is able to use tallies to help him get the right answer. But frequently he seems careless with tallying his marks and is not conscientious about checking his work. When the classroom aide sits next to him and asks him to redo the problem, he can correct the problem accurately. His teacher wants him to learn to check his problems himself.

Phase 1: Select Behavior for Self-Management

The desired behavior for Max is accurate math computations. His behavioral objective includes the mastery criteria:

> Given 10 math problems, Max will write the correct answer to 9 of the problems on three out of four assignments.

Currently Max is completing worksheets with an average of 6 (out of 10) problems correct. The classroom aide has collected assignments for the past week to get this average. As noted earlier, Max can get more problems correct when the aide sits next to him and prompts him to check his answers.

Phase 2: Prepare to Teach Self-Management

A self-reinforcement component is selected for Max because (1) his work, when an aide is seated next to him, can be completed accurately, (2) he works well when the aide is seated next to him, and (3) his favorite activity in the classroom is working on the computer. Max's teacher thinks that a self-reinforcement system would motivate him to do his work accurately.

A math worksheet has been modified to include two additional columns that allow Max to document his accuracy and rewards (the self-management device; see Figure 10). The "done" column is for Max to check after he completes each problem. The second column is for Max to check off after he has compared his answer to an answer sheet. He gives himself a "+" if his answer is correct and a "-" if his answer is incorrect. Max will be queried later about what he would like to do once he has accurately

Figure 10

Self-Reinforcement of Math Work

Student's name: Max Date: 6/12

Directions: Do math problems 1–10. Then check all of your work. If you reached your goal, take your reward.

My goal: I'm working for 9 **correct and** computer time **reward.**

PROBLEM	DONE?	CORRECT?
1. 5 + 2 =		
2. 10 – 3 =		
3. 4 + 7 =		
4. 8 +2		
5. 12 –3		
6. 9 + 5 =		
7. 10 + 6 =		
8. 14 + 0 =		
9. 15 –7		
10. You make up a problem:		

DID I MEET MY GOAL? ☺ **OR** ☹

DID I EARN MY REWARD? ☺ **OR** ☹

completed a predetermined number of problems. Thus, his reinforcement is selected by him. At the top of the page Max will note how many correct answers he is working for; in the next space he will indicate the reward he is working for.

The reward can be granted at the end of Max's worktime after he has checked the problems and determined that he has met the predetermined criteria (e.g., 9 out of 10 problems completed accurately).

Phase 3: Teach Self-Management

The 10-step process is used to prepare Max to use self-reinforcement independently.

Introduce Behavior to Be Managed

1. **Name the desired behavior and demonstrate examples and nonexamples.** The aide demonstrates for him how to work on each problem and check his work himself. The aide also demonstrates how working fast without checking can result in incorrect answers. As the aide is demonstrating, he also tells Max what he is doing.
2. **Discuss the benefits of the desired behavior.** Max and the aide discuss how solving problems correctly results in a higher grade on the assignment and more problems solved correctly. Adding and subtracting correctly contribute to success in other situations: (1) when he is class monitor and responsible for distributing enough materials to classmates; (2) when classmates are absent and a total number of lunch orders are needed; (3) when purchasing candy at a store.
3. **Provide practice of the desired behavior and name mastery criteria.** Max and the aide practice solving problems correctly and solving problems incorrectly. The number of problems completed correctly are added up at the end of each worksheet practice session, and the number correct are compared to the targeted criteria of nine correct.

Introduce Self-Management System

4. **Describe the self-management procedures and materials and benefits.** The self-reinforcement worksheet is introduced to Max at this point. First, Max chooses the reward he wants to work for when he gets 9 out of 10 problems correct. Then the aide shows him how to use the worksheet assignment so that he can earn that reward. The problems are written on the worksheet, and the aide describes how Max is to use the two additional columns for noting (1) when each problem is completed by Max, and (2) when all problems are completed and checked against the teacher's answer sheet.
5. **Model self-management while performing the desired behavior.** The aide talks about what he is thinking as he uses the self-reinforcement worksheet. "First I choose my reward. I like computer time, so I'm going to work for that. Now I do the first problem carefully so I don't make any mistakes. Okay. I did the problem. I worked carefully and checked it over. Now I check off that I've done the first one. Now for the second one. I'm doing it carefully. Now I check it. I think I did it right. Good. So I mark that number 2 is finished and go on to number 3." The aide involves Max as he does the next problem, then they trade off modeling of each problem until they finish the worksheet.

Provide Practice and Assess Mastery

6. **Provide guided practice for using the self-management procedures and materials; role-play the desired behavior.** Max and the aide role-play using the self-reinforcement worksheet and completing

problems. The aide demonstrates by "being Max" and Max plays the role of the aide. Then they trade off roles. Examples and nonexamples are used along with think-aloud modeling to prompt Max to the correct actions. At the end of the worksheet, when 9 out of 10 are correct, Max uses the computer.

7. **Assess student's mastery of the self-management system within the role-play situation.** Max should be able to show the aide how to complete a worksheet from start to finish during a role-play situation—from selecting the reinforcer, to recording that the problem is done and whether it is correct, to earning the reinforcer, to accessing the reinforcer. Max must understand how many problems he needs to get correct to earn the reward.

8. **Discuss the specific situation in which self-management will be used.** Max will use the worksheet during the math session when some of Max's peers are working at their desks and some are with the teacher. The aide quizzes him on when he will use the self-reinforcement worksheet assignment so that he is sure Max knows when to use it.

9. **Provide independent practice opportunities for using the self-management system.** On 3 days during the math session when Max should be working on his math problems, he uses the specially designed worksheet that includes self-reinforcement parts. The aide watches Max closely to make sure he is using the form correctly.

10. **Assess student's mastery of the self-management system within the specified situation.** During the first 3 days, when the aide was closely monitoring his use of the self-reinforcement form, Max was able to use the form correctly and earn computer time.

Phase 4: Evaluate Student Performance

Max's teacher is using a curriculum-based assessment to graph Max's performance on each worksheet. Max began his sessions with 5 out of 10 problems completed correctly and independently. The aide still needed to sit with him while he corrected his work. Using the self-reinforcement system, he gradually increased his performance to consistently meet the goal of 9 out of 10 problems completed correctly and independently. The reinforcement of computer time was initially delivered immediately following the seatwork assignment, and now Max is using self-reinforcement systems with other assignments and accumulating several computer time rewards so he can have a longer amount of time at the computer at the end of the day.

You can use self-management with students for many different behaviors and areas. (See Table 8 for some additional suggestions.) The next chapter discusses ways to extend the use of successful self-management techniques to other parts of the student's day.

Table 8

Additional Ideas for Self-Management

1. Follow a sequence to complete a math problem.
2. Turn in homework each day.
3. Bring the correct supplies to each class.
4. Compare your writing sample to an "excellent" model and rate how you did.
5. Take photographs of materials and activities and use as picture prompts.
6. Transition from one class activity to the next (e.g., writing independently at a desk without needing detailed verbal or physical instructions).
7. Focus on routines that occur every day in the classroom. For example, when typical students are expected to return to their desks, take out their work and begin work, students with developmental disabilities should be taught how to independently do the same type of things using self-management.
8. Involve the student in making decisions, such as, "Which self-management sheet do I want to use next?" or, "In what order do I want to use these three self-management sheets on math, writing, and reading?"
9. Encourage students to set goals: "What tasks will I get done before recess?"
10. Use low-tech or high-tech devices as appropriate. (Is computer needed to verbalize direction for student? Or will pictures suffice?)
11. Train using multiple examples of the same behavior name (e.g., on-task behavior can mean several different types of behaviors).
12. Use the same self-management device for more than one content or behavior area.
13. Involve peers in modeling examples and nonexamples of behaviors.
14. Videotape the student when practicing an example (and maybe a nonexample) of self-management.
15. Peer involvement could be used to help the student remember to use the self-management device.
16. Monitor correct pronunciations/identifications of words: Say each word on a list and after each word play the corresponding word card on the language master and note "+" or "-" if word pronounced correctly.

CHAPTER FIVE

A Dozen Ways to Extend the Use of Self-Management

The following suggestions can be used to promote generalization and greater use of self-management techniques.

When students learn how to effectively manage their behaviors (whether social, academic, or work sequence) in one setting, they should immediately begin using the same or a similar technique in other settings, with other behaviors, using different materials, and when in the presence (or not) of other adults or peers. This chapter identifies ways to extend the use of self-management techniques to other skills, work behaviors, and social behaviors. You are encouraged to capitalize on students' successful performance with one set of student behaviors by targeting similar sets of behaviors that frequently occur in school and home settings. The following 12 suggestions can be used to promote generalization and greater use of self-management techniques.

1. Develop devices (such as checklist sheets and formats) for self-management that can be used with several different behaviors or skill areas so that the format does not need to be retaught as you generalize to new behaviors or skills. For example, when Charlotte learns how to use the self-monitoring checklist during morning routines, a similar checklist that has different routines on it can be used during other parts of the school day and at home.
2. Discuss with family members the skill areas that their child could learn to perform independently at home. Families may spend

a lot of time reminding their child to do things (e.g., brush teeth, make up bed, fix breakfast) that the child knows how to do but does not do on his own. If their child could be taught to use a self-management checklist for these types of tasks, then family members may be able to spend more quality time with their child. For example, instead of constantly monitoring (or reminding) their child to do tasks, more time could be spent on teaching, learning, and practicing new skills.

3. Each peer or adult who interacts with the student needs to know which behaviors the student is learning how to self-manage. The student is less likely to learn to independently perform tasks in a variety of settings when she knows that "help" is available in one setting but not in another. People interacting with that student across settings should be requiring, prompting, and reinforcing the student's independent performance of skills or tasks that are being learned (or that have been learned) using self-management techniques. The teacher who instructs the student in self-management should inform other significant adults in other settings about the self-management system, the behaviors that have been targeted, and how the system can be used in other places (and even with other behaviors).

4. When the materials used(e.g., worksheet, index card, wrist card, counting device) or self-management devices are available in other settings, the students are more likely to (1) be reminded of the behaviors they know to do using self-management or (2) use the materials in that new setting. Again, the adults in those new settings need to be aware of the materials and their use and remind the student to use them.

5. Fade the use of materials in the training setting when desirable and independent behavior is occurring. When students do not need to use the self-management devices any longer, gradually decrease their use (e.g., student fills out the checklist every other day, then just a couple of days a week, then only once a week) while concurrently reinforcing the student's acquisition of independence.

6. Replace material or tangible reinforcers with social reinforcers as soon as possible. This does not mean the total elimination of reinforcers; it means that more natural reinforcers—such as verbal praise—are used whenever possible.

7. Increase the time interval for reinforcement so that students have to work for extended amounts of time to get a reinforcer. Initially, a student may be receiving tangible reinforcers more frequently (e.g., at the end of each 20-minute work session). Gradually, however, the amount of time that the student works for a reinforcer, or the number of problems completed to earn a reinforcer, should be increased. Factors to consider when increasing the interval for reinforcement are (1) student characteristics, (2) the nature of the task the student is doing, and (3) time requirements or limits that typically exist in the environment.

8. Continue to monitor student performance regarding the behavior when students are using self-management techniques. Periodically you may need to reintroduce the self-management system when student behaviors indicate that reminders are necessary. For example, when a student begins using self-management, the specified behavior might improve for several weeks. Some teachers may want to fade their monitoring of the

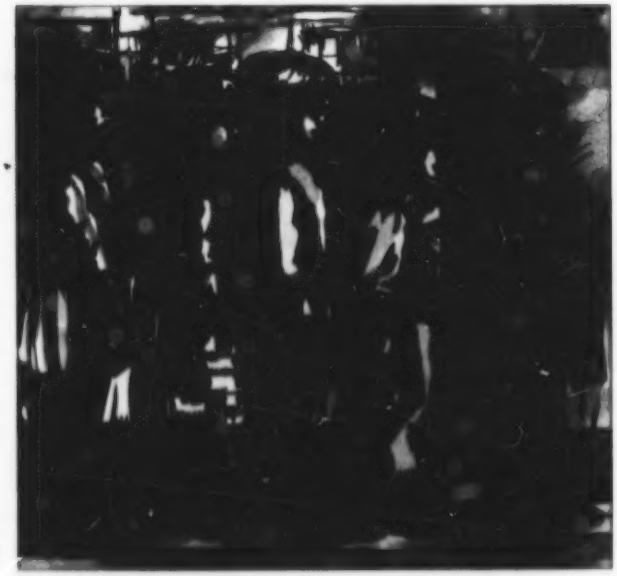
desired behavior once they note its improvement. However, you still need to monitor the desired behavior (e.g., check at least once a week) to make sure that the behavior is maintaining its improvement.

9. Reinforce the student's use of appropriate behaviors that he or she has learned to control using self-management. Some students will begin to generalize self-management behaviors to other settings (although generalization seldom occurs without having been taught), and you should capitalize on the opportunities to reinforce spontaneous generalization.
10. During the training, implementation, and generalization phases, use multiple examples of the desirable behaviors to be self-managed. For example, instead of targeting one "good work habit," target several behaviors that mean good work habits. Instead of targeting one behavior that means on-task, target several behaviors that mean on-task.
11. If the teacher's presence becomes the stimulus for a student to use self-management, the teacher needs to prompt the student to use the management system when the teacher is not there (for short amounts of time initially, then increase teacher's absence gradually). Reinforce the student for managing her behavior on her own."Did you play right while I was gone?" "Did you do your work on your own today?" "How well did you work when I was teaching the other group?"
12. Involve the student in developing his own self-management system; include the student in targeting behaviors, developing the monitoring device, determining when to record, and selecting reinforcers.

CHAPTER SIX

Summary

We continually ask ourselves if we are using the most effective techniques when teaching students with developmental disabilities. Self-management represents a potentially powerful instructional technology, and teachers who teach their students to document their actions are better preparing their students to successfully and independently accomplish tasks and learn routines.



Self-management techniques can be taught to young students.

Students with developmental disabilities can be taught to have more influence and control over their behaviors, and researchers are finding that self-management techniques can be taught to young students. Students who independently perform a variety of behaviors are in a better position to learn, play, and work in today's schools and tomorrow's community settings.

This book has presented a series of self-management components that can be used in elementary-school settings: self-monitoring, self-evaluation, and self-reinforcement. These components can be used individually or in combination, and they can be enhanced by teaching students to set goals for their performance, choose rewards they would like to work toward, and celebrate their performance when they reach those goals.

In this book the teacher's planning, preparation, teaching, and assessment processes are described within four phases. These phases synthesize a variety of steps and sequences that multiple researchers have used in conducting self-management validation procedures. A 10-step instructional process is delineated. Examples of student behaviors and self-management documentation forms are used throughout this book to illustrate the multiple ways in which you can individualize the components.

Students who learn to use self-management techniques in one setting should be encouraged to use similar techniques in other settings. However, generalization is not likely automatically to occur; you need a plan for this. Your plans can include modifying skills or behaviors targeted for self-management, targeting multiple examples of skills for self-management, and informing other people to prompt and reinforce the student's use of self-management.

Every elementary classroom, special or general, should be incorporating some aspect of self-management within and across daily routines, expectations, and tasks. Many (if not all) students can learn to take more control and responsibility for their learning and performance at a young age; instruction in self-management techniques can allow them to achieve this.

Bibliography

Agran, M., & Moore, S. C. (1994). How to teach self-instruction of job skills. *Innovations*. Washington, DC: American Association on Mental Retardation.

Alberto, P., Elliott, N., Taber, T., Houser, E., & Andrews, P. (1993). Vocational content for students with moderate and severe disabilities in elementary and middle grades. *Focus on Exceptional Children, 25*(9), 1-10.

Browder, D. M., & Shapiro, E. S. (1985). Applications of self-management to individuals with severe handicaps: A review. *Journal of The Association for Persons With Severe Handicaps, 10*, 200-208.

Carpenter, S. L., Musy, T., & King-Sears, M. E. (1997). Behavior management in inclusive settings. In D. F. Bradley, M. E. King-Sears, & D. M. Switlick *Teaching students in inclusive settings: From theory to practice* (pp. 322-364). Needham Heights, MA: Allyn & Bacon.

Chiron, R., & Gerken, K. (1983). The effects of a self-monitoring technique on the locus of control orientation of educable mentally retarded children. *School Psychology Review, 12*, 87-92.

Cole, C. L., & Bambara, L. M. (1992). Issues surrounding the use of self-management interventions in the schools. *School Psychology Review, 21*, 193-201.

Connell, M. C., Carta, J. J., & Baer, D. M. (1993). Programming generalization of in-class transition skills: Teaching preschoolers with developmental delays to self-assess and recruit contingent teacher praise. *Journal of Applied Behavior Analysis, 26*, 345-352.

Dunlap, L. K., Dunlap, G., Koegel, L. K., & Koegel, R. L. (1991). Using self-monitoring to increase independence. *Teaching Exceptional Children, 23*(3), 17-22.

Ferretti, R. P., Cavalier, A. R., Murphy, M. J., & Murphy, R. (1993). The self-management of skills by persons with mental retardation. *Research in Developmental Disabilities, 14*, 189-205.

Hall, L. J., McClannahan, L. E., & Krantz, P. J. (1995). Promoting independence in integrated classrooms by teaching aides to use activity schedules and decreased prompts. *Education and Training in Mental Retardation and Developmental Disabilities, 30*, 208-217.

Harchik, A. E., Sherman, J. A., & Sheldon, J. B. (1992). The use of self-management procedures by people with developmental disabilities: A brief review. *Research in Developmental Disabilities, 13*, 211-227.

Haring, N. G., & Liberty, K. A. (1990). Matching strategies with performance in facilitating generalization. *Focus on Exceptional Children, 22*(6), 1-16.

Horner, R. H., & Brigham, T. A. (1979). The effects of self-management procedures on the study behavior of two retarded children. *Education and Training of the Mentally Retarded, 41*, 18-24.

Hughes, C. (1992). Teaching self-instruction utilizing multiple exemplars to produce generalized problem-solving among individuals with severe mental retardation. *American Journal on Mental Retardation, 97,* 302-314.

Hughes, C., & Agran, M. (1993). Teaching persons with severe disabilities to use self-instruction in community settings: An analysis of applications. *Journal of The Association for Persons With Severe Handicaps, 18,* 261-274.

Hughes, C. A., & Boyle, J. R. (1991). Effects of self-monitoring for on-task behavior and task productivity on elementary students with moderate mental retardation. *Education and Treatment of Children, 14,* 96-111.

Hughes, C. A., Korinek, L., & Gorman, J. (1991). Self-management for students with mental retardation in public school settings: A research review. *Education and Training in Mental Retardation, 26,* 271-291.

King-Sears, M. E. (1994). *Curriculum-based assessment in special education.* San Diego: Singular.

King-Sears, M. E., & Cummings, C. S. (1996). Inclusive practices of classroom teachers. *Remedial and Special Education, 17,* 217-225.

Koegel, L. K., Koegel, R. L., Hurley, C., & Frea, W. D. (1992). Improving social skills and disruptive behavior in children with autism through self-management. *Journal of Applied Behavior Analysis, 25,* 341-353.

Koegel, R. L., & Koegel, L. K. (1990). Extended reductions in stereotypic behavior of students with autism through a self-management treatment package. *Journal of Applied Behavior Analysis, 23,* 119-127.

Lagomarcino, T. R., & Rusch, F. R. (1989). Utilizing self-management procedures to teach independent performance. *Education and Training in Mental Retardation, 24,* 297-305.

Lalli, E. P., & Shapiro, E. S. (1990). The effects of self-monitoring and contingent reward on sight word acquisition. *Education and Treatment of Children, 13,* 129-141.

MacDuff, G. S., Krantz, P. J., & McClannahan, L. E. (1993). Teaching children with autism to use photographic activity schedules: Maintenance and generalization of complex response chains. *Journal of Applied Behavior Analysis, 26,* 89-97.

McCarl, J. J., Svobodny, L., & Beare, P. L. (1991). Self-recording in a classroom for students with mild to moderate mental handicaps: Effects on productivity and on-task behavior. *Education and Training in Mental Retardation, 26,* 79-88.

Pierce, K. L., & Schreibman, L. (1994). Teaching daily living skills to children with autism in unsupervised settings through pictorial self-management. *Journal of Applied Behavior Analysis, 27,* 471-481.

Prater, M. A., Hogan, S., & Miller, S. R. (1992). Using self-monitoring to improve on-task behavior and academic skills of an adolescent with mild handicaps across special and regular education settings. *Education and Treatment of Children, 15,* 43-55.

Robertson, S. J., Simon, S. J., Pachman, J. S., & Drabman, R. S. (1979). Self-control and generalization procedures in a classroom of disruptive retarded children. *Child Behavior Therapy, 1,* 347-362.

Shapiro, E. S., Browder, D. M., & D'Huyvetters, K. K. (1984). Increasing academic productivity of severely multi-handicapped children with self-management: Idiosyncratic effects. *Analysis and Intervention in Developmental Disabilities, 4*, 171-188.

Shapiro, E. S., & Klein, R. D. (1980). Self-management of classroom behavior with retarded/disturbed children. *Behavior Modification, 4*, 83-97.

Shapiro, E. S., McGonigle, J. J., & Ollendick, T. H. (1980). An analysis of self-assessment and self-reinforcement in a self-managed token economy with mentally retarded children. *Applied Research in Mental Retardation, 1*, 227-240.

Stahmer, A. C., & Schreibman, L. (1992). Teaching children with autism appropriate play in unsupervised environments using a self-management treatment package. *Journal of Applied Behavior Analysis, 25*, 447-459.

Strain, P. S., Kohler, F. W., Storey, K., & Danko, C. D. (1994). Teaching preschoolers with autism to self-monitor their social interactions: An analysis of results in home and school settings. *Journal of Emotional and Behavioral Disorders, 2*(2), 78-88.

Turner, L. A., Dofny, E. M., & Dutka, S. (1994). Effect of strategy and attribution training on strategy maintenance and transfer. *American Journal on Mental Retardation, 98*, 445-454.

Whitman, T. L. (1990). Self-regulation and mental retardation. *American Journal on Mental Retardation, 94*, 347-362.

About the Authors

MARGARET KING SEARS, Ph.D.

STEPHANIE CARPENTER, Ph.D.

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